

**Original Article**

## **Profile of Medico-Legal Cases in Casualty of a Tertiary Health Care Centre in South-Western Maharashtra: A Retrospective Study**

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### **ABSTRACT**

Medico legal cases (MLC) are an integral part of medical practice that is frequently encountered by Medical Officers (MO) working in emergency department. An MLC is a case of injury/ illness where the attending doctor, after eliciting history and examining the patient, thinks that some investigation by law enforcement agencies is essential to establish and fix responsibility for the case in accordance with the law of the land. The occurrence of MLCs is on the rise, proper handling and accurate documentation of these cases in casualty is of prime importance to avoid legal complications. This Study profile and pattern of medico-legal cases reported at a tertiary care hospital and suggest measures for improvement of medico-legal work in casualty. This study is a record based retrospective study of medico-legal cases registered in medico-legal register in casualty department of a tertiary care hospital in South Western India. Total number of medico-legal cases reported during 36 months period were 1387, of which majority (n=1125, 81.12%) were males. The most common age group affected was 21-30 years, included 317 (22.86%) cases and second common age group were between 31-40 years, 250 (18.02%) cases. The study revealed that road traffic accidents (n=875, 63.09%) constituted the majority of the medico-legal cases out of total 1387, followed by found dead cases (11.90%). Our study showed that maximum number of medico-legal cases reported to casualty were in month of May (n=198, 14.28%) followed by February (n=157, 11.32 %). Season wise distribution of cases revealed that majority i.e. 40.16% presented during summer season. Majority (n=562, 40.52%) of the incidents took place between 6 pm-12 am i.e. in evening hours. Most of the cases (n=804, 57.97%) reached hospital for examination and treatment within 1 hour after the incident. A need for training of young medical officers in handling medico legal cases was felt so that they are more confident in handling such cases. This will also help in proper documentation and evidence collection in cases of physical and sexual assault.

**Keywords:** Medico legal, Physical assault, Injuries, Road traffic accident, Sexual assault

### **INTRODUCTION**

Medico legal cases (MLC) are an integral part of medical practice that is frequently encountered by Medical

Officers (MO) working in emergency department.<sup>1</sup>A doctor needs to not only treat his patient to the best of his ability but also abide by the laws of the land while

discharging his duties as he has both ethical and legal obligations [2]. Legal obligations of doctors flow from the ethical and moral obligations towards the patients which are best expressed in *Charak Samhita*, the ancient Indian Ayurvedic text- “The physician should regard all his patients as if they were his own children and vigilantly guard them from all harm, considering this to be his highest religion.” It is important that every doctor understands the legal obligations and fulfils them to the best of his abilities [3].

An MLC is a case of injury/ illness where the attending doctor, after eliciting history and examining the patient, thinks that some investigation by law enforcement agencies is essential to establish and fix responsibility for the case in accordance with the law of the land [4-5]. It can also be defined as a case of injury or ailment, etc, in which investigations by the law enforcing agencies are essential to fix the responsibility regarding the causation of the said injury or ailment [6]. All the medico-legal cases are registered in casualty. Further it serves as an outpatient department after the routine outpatient department hours [7].

The occurrence of MLCs is on the rise, proper handling and accurate documentation of these cases in casualty is of prime importance to avoid legal complications. The on duty doctor in the casualty department has to first stabilize the patient after which he is also duty bound to register a particular case as a medico-legal case whenever indicated [8]. The decision to label a case as MLC should be based on sound professional judgment, after a detailed history taking and thorough clinical examination. Profiling of medico-legal cases also forms an integral aspect for the prevention of preventable casualties in future and to study the crime rate in area [9]. The objectives of this study is to study the profile and pattern of medico-legal cases reported at a tertiary care hospital and suggest measures for improvement of medico-legal work in casualty.

**MATERIAL AND METHODS**

This study is a record based retrospective study of medico-legal cases registered in casualty department of

a tertiary care hospital in South Western India. All the reported MLC cases from 1st January 2016 to 31st December 2018 were included in the study. The information regarding the cases was collected from the medico-legal register and hospital case files of the patient using a pre designed pro forma. Necessary permission was taken from the Institutional ethical committee. During the study period a total of 1387 medico-legal cases were registered in the casualty. The collected data was analyzed and depicted in form of tables, graphs and pie charts by using various parameters and compared with other similar studies. The results were studied using appropriate statistical methods. Microsoft word and excel were used for generating charts and graphs.

**OBSERVATIONS AND RESULTS**

In the study period of 03-years between January 2016 and December 2018, a total of 1387 medico legal cases were registered in casualty department of a tertiary care hospital in South Western India. The Male victims (81.12%, n=1125) outnumbered females (18.88%, n=262); with the male to female ratio 4.2: 1 (Table 1).

The majority of victims belonged to 3<sup>rd</sup> decade (22.86%, n=317), followed by 4<sup>th</sup> decade (18.02%, n=250) (Table 2).

**Table 1: Gender wise Distribution of MLCs**

Gender	No. of Cases	Percentage
Male	1125	81.12
Female	262	18.18
Total/M:F Ratio	1387	4.2:1

**Table 2: Age Distribution of MLCs**

Age Groups	Frequency	Percentage
<10	64	4.61
11 to 20	118	8.51
21 to 30	317	22.86
31 to 40	250	18.02
41 to 50	196	14.13
51 to 60	189	13.63
61 to 70	141	10.17
>71	112	8.07

In the present study, majority of victims were resident of an urban region (69.35%, n=962), while 30.65% (n=425) were from the rural area (Table 3).

**Table 3: Region wise distribution**

Criteria	No. of Cases	Percentage
Urban	962	69.35
Rural	425	30.65

When month wise distribution of cases was analyzed, the highest frequency was registered in May (n=198, 14.28%) and minimum cases were registered in January (n=75, 05.41%) (Table 4).

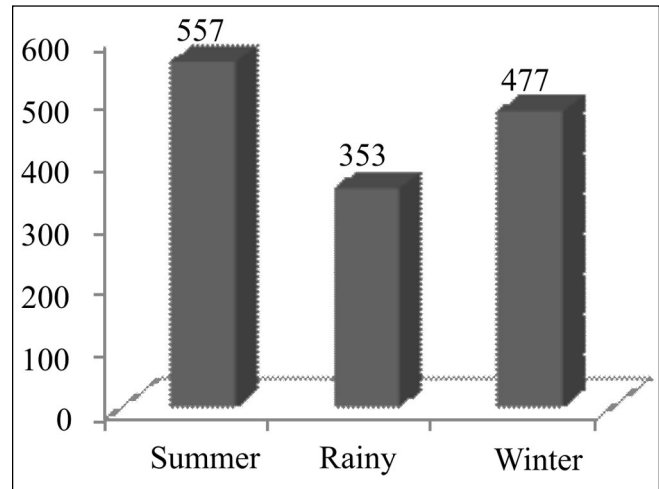
**Table 4: Month wise Distribution**

Month	No. of MLC	Percentage
January	75	5.41
February	157	11.32
March	113	8.15
April	108	7.79
May	198	14.28
June	138	9.95
July	81	5.84
August	92	6.63
September	78	5.62
October	102	7.35
November	112	8.07
December	133	9.59
Total	1387	100

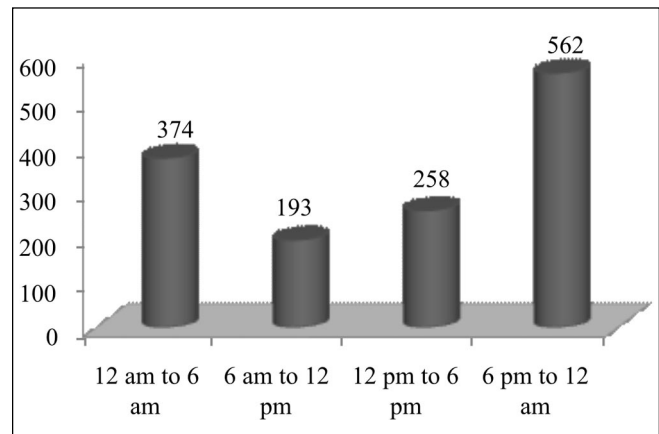
There was no significant seasonal variation. We registered a higher number of victims in summer (n=557, 40.16%) and a slight decrease in winter (n=477, 34.39%) (Figure 1).

The majority of the medico legal cases were reported between 6 pm to 12 am (n=562, 40.52%) followed by 12 am to 6 am (n=374, 26.96%). Least number of incidents took place between 6 am to 12 pm (n=193, 13.91%) (Figure 2).

Majority of cases (n=804, 57.97%) reported to casualty within 1 hour from the time of incidence, whereas 5.12%



**Figure 1: Season wise Distribution**



**Figure 2: Distribution of Time of Incident of MLCs**

(n=71) cases reported after 12 hours of incidence (Figure 3).

Out of total cases reported to casualty, majority (n=875, 63.09%) were of road traffic accident (RTA), followed by found dead cases (n=165, 11.90%), Non-RTA injuries cases amounted to 10.81% (n=150), cases of burn injury were 6.13% (n=85) and 5.98% (n=83) were poisoning cases. There were 3 cases of sexual assault out of which one case was registered under POCSO (Figure 4).

Opinion was taken from single department in 17.38% (n=241) cases, from two departments in 70.15% (n=973) cases, whereas more than two departments were involved in 12.47% (n=173) cases (Table 5).

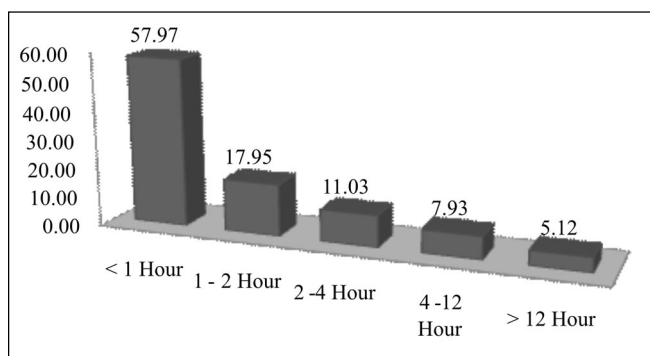


Figure 3: Distribution of time taken for reporting to hospital

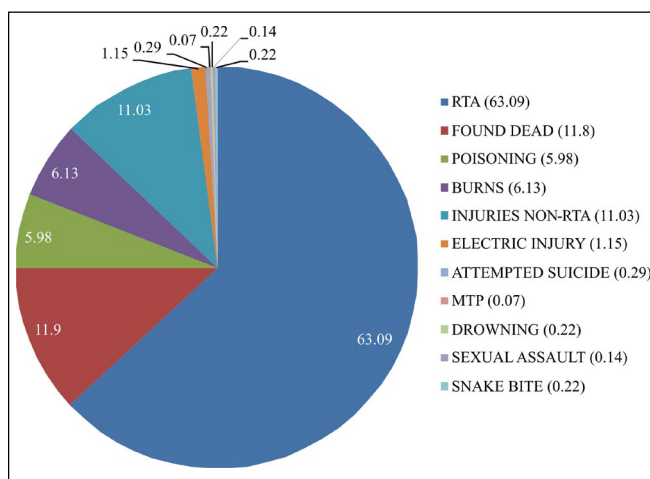


Figure 4: Spectrum of Medico Legal Cases

Table 5: Distribution of opinion of other department taken in MLCs

No. of the Department	No. of Cases	Percentage
One Department Opinion	241	17.38
Two Department Opinion	973	70.15
More than Two Department	173	12.47
Total	1387	

Surgery department was called for intervention in maximum number of cases i.e. 74.12% (n=1028), followed by orthopaedics department in 59.55% (n=826) cases and other departments were also referred as shown in Table 6.

Alleged manner of incidence was accidental in 80.17% (n=1112) cases, suicidal in 6.42% (n=89) of cases and homicidal in 1.51% (n=21) of cases and in 11.9% manner was undetermined (Figure 5).

Table 6: Distribution of individual departmental opinion taken in MLCs

Name of the Department	No. of Cases	Percentage
Surgery	1028	74.12
Orthopedics	826	59.55
Neurosurgery	334	24.08
Plastic Surgery	167	12.04
ENT	102	7.35
Ophthalmology	109	7.86
Medicine	501	36.12
Paediatrics	43	3.10
Gynaecology	1	0.07

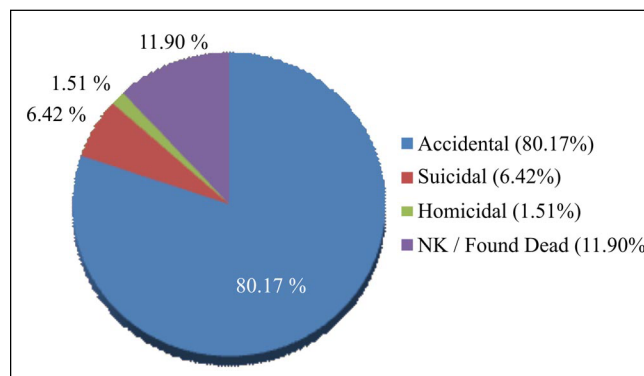


Figure 5: Distribution of Alleged Manner of incidence of MLC

## DISCUSSION

Total number of medico-legal cases reported during 03 Year period were 1387, of which majority (1125, 81.12%) were males. These findings are consistent with other similar studies of profile of medico legal cases [1,7-14]. This is because males are more exposed to outdoor activities (education/job/sports) as a result of which they are more vulnerable to accident or injuries. The male predominance might also be due to the fact that they are the sole breadwinner in most of the families and they are more commonly engaged in outdoor activities which makes them more vulnerable to RTA in a metro city like the present one where the study have been conducted.

The present study had also shown the age group of 21-30 years as most commonly involved age group in medico-

legal cases, followed by the age group of 31-40 years which is similar to other studies<sup>[1,7-14]</sup>. The findings vary with the study conducted by Tariq *et al.*<sup>[18]</sup> This is due to the fact that this age group is economically more productive, lead a more active life and also involved in outdoor sports and recreation activities, there by exposing themselves to environmental factors.

In this study, majority of victims were resident of an urban region (69.35%, n=962), while 30.65% (n=425) were from the rural area. Similar findings were also observed by Tomar *et al.*<sup>[7]</sup> who reported 70.02% in urban population and the rural victims were 29.98%, Hussaini *et al.*<sup>[9]</sup> who found 55.91% in urban population and 44.08% in rural population and Siddappa<sup>[15]</sup> who found 52.48% in urban population and 47.52% from rural population. The present study has been done in a cosmopolitan city of south western, Maharashtra hence cases from urban area are more than in rural area.

When month wise distribution of cases was analyzed, the highest frequency was registered in May and minimum cases were registered in January. These findings are different from what has been reported by Hussian *et al.*<sup>[9]</sup> Garg *et al.*<sup>[11]</sup>, Sangwan *et al.*<sup>[14]</sup>, Mahesh *et al.*<sup>[16]</sup> and Saxena<sup>[17]</sup>. This is due to the fact that their population demography and place of study's different from this study.

We registered a higher number of victims in summer and a slight decrease in winter season. This finding is similar to the findings of Mir *et al.*<sup>[8]</sup>, Siddhart Timsinha *et al.*<sup>[19]</sup> and Qudisia *et al.*<sup>[20]</sup>. These findings are different from those of Hussian *et al.*<sup>[9]</sup> and Garg *et al.*<sup>[11]</sup> who have reported higher number of cases in rainy season. Summer season is more active period for the teenagers due to school and college vacations (recreational activities) and workers from rural areas also migrate for work to the city at the construction sites. These outdoor activities make people more prone to injuries.

The majority of the medico legal cases were reported between 6 pm to 12 am followed by 12 am to 6 am. Least number of incidents took place between 6 am to

12 pm. The findings vary with the studies conducted by Garg *et al.*<sup>[11]</sup>, Mahesh *et al.*<sup>[16]</sup> and Saxena<sup>[17]</sup>. Maximum number of cases in evening is due to the fact that during this period most of the office goers are rushing to their home. Due to lack of public transport facilities, two wheelers are the commonest means of transport for most of this population.

In present study, majority of cases reported to casualty within 1 hour from the time of incidence. These findings are consistent with that of Yadav *et al.*<sup>[21]</sup>, Siddappa<sup>[15]</sup> and Tomar *et al.*<sup>[7]</sup>. This might be due to the metropolitan nature of the city where the study is being conducted. The hospitals are usually nearby unlike the rural settings. Also the ambulance services and passers by usually are fast in taking the victim to the hospital.

In the present study we observed that most of the medico legal cases (63.09%) were due to road traffic accident (RTA). This finding was consistent with other studies<sup>[10-11,14,15,17,19]</sup>. However, in the study by Maliok *et al.*<sup>[12]</sup> and Yadav *et al.*<sup>[21]</sup> poisoning was the most common cause of MLC<sup>[21]</sup>. Our study was also in contrast with the findings of Hussaini *et al.*<sup>[9]</sup> who observed maximum number of cases reported to casualty were of burn injury. The increased rate of road traffic accident in a metro city is due to population explosion, increased motorization especially two wheelers, poor road infrastructure, rash and negligent driving.

Opinion was taken from single department in 17.38% cases, two department opinions were sought in 70.15% cases, whereas more than two departments were involved in 12.47% cases. Our study is in contrast with the findings of Tomar *et al.*<sup>[7]</sup> and Timsinha *et al.*<sup>[19]</sup> who observed single department involvement in most of the cases. Surgery department was called for intervention in maximum number of cases i.e. 74.12%, followed by orthopaedics department in 59.55% cases, which is consistent with the findings of the above studies. Majority of the times surgery and orthopaedics department are being consulted because in our study maximum numbers of MLCs were due to RTA. Alleged manner of incidence was accidental in 80.17% cases, suicidal in 6.42% of

cases and homicidal in 1.51% of cases. Our study is consistent with Tomar *et al.*<sup>[7]</sup>, Siddappa<sup>[15]</sup> and Mir *et al.*<sup>[8]</sup>. Our study is inconsistent with study conducted by Yadav *et al.*<sup>[21]</sup> where assault cases (39.6%) were almost equal to accidental cases (38.1%).

## CONCLUSION

Medicine is a noble profession. While discharging his duties, a doctor has ethical and legal obligations. Better understanding of medico legal issues through continuous medical education can provide protection against unnecessary litigation. The present study showed that the maximum number of medico-legal cases were of road traffic accident, seen among young individuals and mostly in urban inhabitants. Prevention of RTA requires a multi-disciplinary approach. Community participation plays a vital role in the prevention of RTA.

## SUGGESTION AND RECOMMENDATION

- o There is an urgent need for more similar studies to understand full spectrum of problem.
- o The health sector needs to develop prevention activities and contribute to the implementation of interventions for RTA prevention.
- o A need for road safety education directed toward youth is recognized.
- o The licensing authorities should devise scientifically based tests before giving license.
- o In the casualty, while attending to an emergency, first priority is to save the life of the patient. All legal formalities stand suspended till this is achieved. This has been clearly exemplified by the Hon'ble Supreme Court of India in *Parmananda Katara Vs Union of India*.
- o Attending casualty medical officer (CMO) has the authority to decide whether the case is to be registered as medico-legal or not. There is no scope for acceding to request pressure from the relatives, patient himself or his colleagues regarding the registration of MLC.

- o Medico legal documents should be prepared in duplicate, with utmost care giving all necessary details, preferably written with a ball-point pen and avoiding overwriting.
- o The attending MO is legally bound to inform the police about MLC. The verbal communication should invariably be followed by communication in writing.
- o Various studies have shown that lack of awareness about medico legal issues can be curtailed through an elementary but structured educational mediation.
- o Reorientation courses and Continuing Medical Education classes for medical practitioners are recommended.

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**Conflict of interest:** None declared.

**Ethical approval:** Necessary ethical approval was obtained.

**Limitations:** Due to record based and its retrospective design in very few cases not all the information pertaining to our study format was available for comparison and compilation.

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